

BACTERIAL LEAF SPOT OF ZINNIA

J. W. Miller

Zinnias, *Zinnia* spp., are grown in full sun during the summer months and are excellent for bedding and border plantings, and cut flowers. The color of the flowers varies from red to yellow, white, lavender, and green (3).

Bacterial leaf spot, caused by *Xanthomonas nigromaculans* f. sp. *zinniae* Hopkins and Dowson, has become an increasingly serious disease in Florida since it was first found here in 1969 (2). The disease and causal agent were first described from Southern Rhodesia by Hopkins and Dowson in 1949 (4). The problem has since been reported from New South Wales (1) and Brazil (5).

**SYMPTOMS.** The disease first appears on the leaves as diffuse, translucent, circular spots, 1-2 mm in diameter, surrounded by large chlorotic halos (fig. 1A). Under wet conditions, the lesions slowly enlarge to about 5 mm across, becoming reddish brown in the center and angular in shape. The lesions may coalesce into areas 0.5-1.0 cm long and develop into ragged patches of decaying tissue (fig. 1B). When the humidity is very high, the disease may produce small brown spots on the flowers. If infection is severe, the flower heads are seriously disfigured and may decay completely (4).

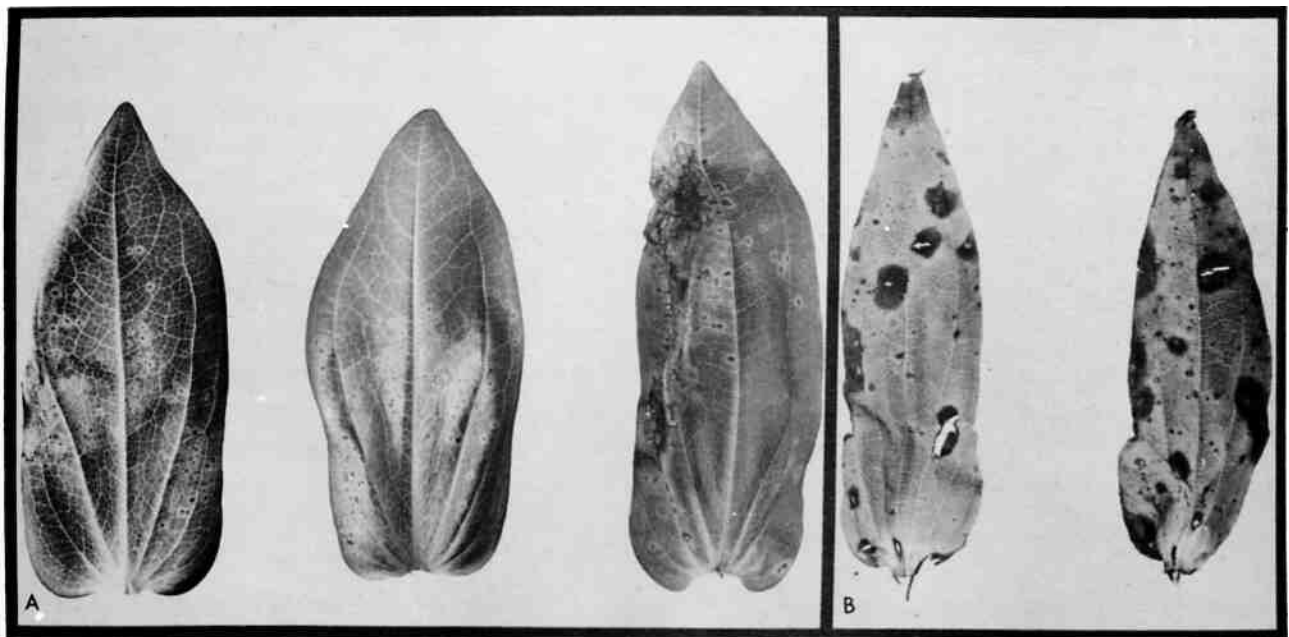


Fig. 1. *Xanthomonas nigromaculans* f. sp. *zinniae* on leaves of *Zinnia* sp. A) Dark, circular to angular leaf spots surrounded by chlorotic halos B) Large areas of decaying tissue.

CONTROL. Since the disease is favored by wet conditions and high humidity, good ventilation and keeping the foliage dry should restrict disease development. Although specific control recommendations are lacking, the use of protective sprays of Kocide 101 plus Dithane M-45 at 1 ½ lbs each/100 gal. water may be helpful.

#### References Cited

1. Bertus, A. L., and A. C. Hayward. 1971. A bacterial leaf spot of zinnia in New South Wales. Linn. Soc. N.S.W. Proc. 96(426, pt. 2):81-84.
2. Bureau of Plant Pathology (Plant Disease Records), Division of Plant Industry, Fla. Dept. of Agr. and Consumer Serv., Gainesville. (Unpublished)
3. Bush, C. S. 1969. Flowers, shrubs and trees for Florida homes. Fla. Dept. Agr. and Consumer Serv. Bull. 195. 179 p.
4. Hopkins, J. C., and W. J. Dowson. 1949. A bacterial leaf and flower disease of zinnia in Southern Rhodesia. Trans. Brit. Mycol. Soc. 32:252-254.
5. Robbs, C. F. 1954. Bacterias fitopatogenicas do Brasil. Agronomia, Rio de J. 13:265-282. (Rev. Appl. Mycol. 35:752, 1956)